

**CLAIMS**

1. Device for processing an echo between at least two communication devices connected by a telecommunication network in order to attenuate, in a signal (Ye) picked up by a communication device comprising at least one microphone (50), the components of a signal broadcasted by at least one loudspeaker (40) on at least one other communication device, characterised in that the echo processing device comprises:

- means (210) for receiving, by means of a connection with at least one other device, information representing at least one signal broadcasted by at least one loudspeaker (40) on another communication device (40),

- means (200) for modifying the signal picked up by the communication device from information representing the broadcasted signal, the broadcasted signal being weighted by a coefficient representing the coupling separating a loudspeaker of the said at least one other communication device from the microphone of the communication device.

2. Echo processing device according to claim 1, characterised in that the echo processing device is included in the communication device.

3. Echo processing device according to claim 2, characterised in that it also comprises means (301) for controlling echo between at least one of the loudspeakers (40) and at least one microphone (50) of the communication device.

4. Echo processing device according to any one of claims 1 to 3, characterised in that the information received representing at least one broadcasted signal from at least one other communication device was previously weighted by a coefficient representing the coupling separating a loudspeaker of the said at least one other communication device from the microphone of the communication device.

5. Echo processing device according to claim 4, characterised in that the means for modifying the signal picked up (301) modify the signal picked up according to the weighted broadcasted signal of at least one other communication device in the reference echo control signal of the communication device.

6. Device for processing echo between at least two communication devices connected by a telecommunication network in order to attenuate, in a signal picked up by another communication device comprising at least one microphone, the components of a signal broadcasted by at least one communication device comprising at least one loudspeaker of at least one communication device, characterised in that the echo processing device comprises:

- means for obtaining information representing the signal broadcasted by the communication device (200),

- means (210) for transferring the information obtained, by means of a connection with at least the other communication device.

7. Echo processing device according to claim 6, characterised in that the echo processing device also comprises means (205, 206, 201, 202) for obtaining information representing the coupling separating at least one loudspeaker of the said at least one communication device from the microphone of the other communication device.

8. Echo processing device according to claim 7, characterised in that the echo processing device also comprises means for weighting the information representing the broadcasted signal of the communication device by the coefficients associated with the information representing the couplings separating at least one loudspeaker of the said at least one communication device from the microphone of the other communication device.

9. Echo processing device according to claim 8, characterised in that the communication device comprises a plurality of loudspeakers (40) and in that the signals reproduced by each loudspeaker of the said at least one communication device are weighted by respective coefficients representing the couplings separating each loudspeaker of the communication device from the microphone of the other communication device and in that the weighted signals are added.

10. Echo processing device according to any one of claims 6 to 9, characterised in that the echo processing device also comprises means for determining the number of other communication devices (205, 206) and means (205, 206) for determining the number of loudspeakers of the other communication devices.

11. Echo processing device according to claim 10, characterised in that the echo processing device also comprises:

- means for generating at least one predetermined audible signal (40),

- means (210) for receiving, by means of a connection with at least one other device, information representing the reception of the audible signal by at least one other device,

- means (200) for determining the coupling separating a loudspeaker of the said communication device from the microphone of at least one other communication device.

12. Method of processing echo between at least two communication devices connected by a telecommunication network in order to attenuate, in a signal picked up by a communication device comprising at least one microphone, the components of a signal broadcasted by at least one loudspeaker of another communication device, characterised in that the echo processing method comprises the steps of:

- receiving, by means of a connection with at least one other device, information representing at least one signal broadcasted by at least one loudspeaker of at least one other communication device,

- modifying the signal picked up by the communication device according to the information representing the broadcasted signal, the broadcasted signal being weighted

by a coefficient representing the coupling separating a loudspeaker of the said at least one other communication device from the microphone of the communication device.

13. Echo processing method according to claim 12, characterised in that the received information representing at least one broadcasted signal of at least one other communication device are weighted by a coefficient representing the coupling separating a loudspeaker of the said at least one other communication device from the microphone of the communication device.

14. Echo processing method according to claim 13, characterised in that the weighted signal picked up is taken into account in the reference echo control signal of the communication device.

15. Method of processing echo between at least two communication devices connected by a telecommunication network in order to attenuate, in a signal picked up by another communication device comprising at least one microphone, the components of a signal broadcasted by at least one communication device comprising at least one loudspeaker, characterised in that the echo processing method comprises the steps of:

- obtaining (E70) information representing the signal broadcasted by the communication device,
- transferring (E73), by means of a connection with at least the other device, the information obtained.

16. Echo processing method according to claim 15, characterised in that the method also comprises a step

(E71) of obtaining information representing the couplings separating at least one loudspeaker of the said at least one communication device from the microphone of the other communication device.

17. Echo processing method according to claim 16, characterised in that the echo processing method also comprises a step (E71) of weighting the information representing the broadcasted signal of the communication device by coefficients associated with the information representing the couplings separating at least one loudspeaker of said at least one communication device from the microphone of the other communication device.

18. Echo processing method according to claim 16, characterised in that the communication device comprises a plurality of loudspeakers and in that the signals reproduced by each loudspeaker of the said at least one communication device are weighted by respective coefficients representing the coupling separating each loudspeaker of the communication device from the microphone of the other communication device, and the weighted signals are added.

19. Echo processing method according to any one of claims 15 to 18, characterised in that the echo processing method also comprises steps of determining the number of other communication devices and determining the number of loudspeakers of the other communication devices.

20. Echo processing method according to claim 19, characterised in that the echo processing method also comprises the steps of:

- generating at least one predetermined audible signal (E2),
- receiving (E4), by means of a connection with at least one other device, information representing the reception of the audible signal by the at least one other device,
- determining (E7) the coupling separating the loudspeaker of the said communication device from the microphone of at least one other communication device.

21. Computer program stored on an information medium, the said program comprising instructions for implementing the processing method according to any one of claims 12 to 14, when it is loaded into and executed by a computer system.

22. Computer program stored on an information medium, the said program containing instructions for implementing the processing method according to any one of claims 15 to 20, when it is loaded into and executed by a computer system.

**ABSTRACT**

The invention concerns a method and device for processing echo between at least two communication devices in order to attenuate, in a picked-up signal of a communication device comprising at least one microphone, the components of the signal broadcasted by at least one other communication device comprising at least one loudspeaker, characterised in that the echo processing device comprises:

- means for receiving, by means of a connection with at least one other device, information representing at least one broadcasted signal of at least one other communication device,
- means for modifying the picked-up signal of the communication device according to information representing the broadcasted signal and information representing the coupling separating a loudspeaker of the said at least one other communication device from the microphone of the communication device.